Appl. No. 10/045,698
Amdt. dated October 12, 2006
Reply to Office Action of July 13, 2006

Atty. Ref. 81800.0177
Customer No. 26021

Remarks/Arguments

Reconsideration of this application is requested.

Claim Status

Claims 1-4 and 8-20 were presented. Claims 1, 2, 8 and 17 are amended. New claims 21-24 are added. Thus, claims 1-4 and 8-24 are now pending.

Claim Rejections – 35 USC 103

Claims 1-4 and 8-20 are rejected under 35 USC 103(a) as obvious over Zakurdaev (US 2002/0073182 A1) in view of Gong (US 2001/0044819). In response, independent claims 1, 2, 8 and 17 are amended to clearly distinguish over Zakurdaev and Gong.

The present invention addresses the problem of establishing connections between network devices in mutually different LANS. This stems from the difficulty in establishing a connection from the Internet to network devices within a LAN. In the present invention, FIG. 2 discloses a terminal 11 initiating a held TCP/IP connection to relay server 4 (1) and terminal 21 initiating a held TCP/IP connection to relay server 4 (1'), thereby forming a two-way connection process. The relay server then associates the two separate held TCP/IP connections to construct a dedicated communication channel between the devices. In this manner, a "virtual" direct connection is realized between terminal 11 and terminal 21 for unhindered and secure communication between network devices in different LANS.

As recited in claims 1, 2, 8 and 17, as amended the first network device *initiates,* logs into and establishes a first held TCP/IP connection with the relay server, and the second network device *initiates,* logs into and establishes a second TCP/IP connection with the relay server. By constrast, in FIG. 2 of Zakurdaev, terminal 204 initiates and establishes a first connection to smart DHCP relay 212 and then *smart DHCP relay 212 initiates and establishes a second connection to ISP 216* in response to a connection demand. Thus, Zakurdaev discloses a one-way

connection process where the connection is formed from a terminal to the relay server and then from the relay server to an ISP.

Gong is directed to an unsigned Java applet employing a relay server to obtain network resources from a remote server. Applet 24 initiates and establishes a first connection to a relay server 20 and then the relay server 20 initiates and establishes a second connection to remote server 16 (FIG. 3). Similar to Zakurdaev, Gong provides a one-way connection in which a second connection is initiated by a relay server and not from a network device.

An advantage of the present invention is that connections to a relay server can be made simultaneously in a two-way connection process. In contrast, a one-way connection process requires the second connection to wait for the first connection to be established. As a result, the two-way connection process of the present invention forms a virtual direct connection more quickly than the one-way connection process. Thus, Gong and Zakurdaev do not disclose two held TCP/IP connections initiated and established independently by two network devices with a relay server, as is required by claims 1, 2, 8 and 17, as amended.

Moreover, applicant's invention provides the ability to maintain security and yet overcome network restrictions, while Gong undermines security in overcoming network restrictions. The stated purpose of Gong's invention is to bypass network restrictions so that an unsigned applet can transmit and receive data from any remote server. Gong admits that Java applets "are deemed untrusted by some" and restrictions are placed such that unsigned applets will be refused network connections (paragraphs [0004] and [0011]). Under Gong, PCs are exposed to potential harm by untrustworthy applets that may request data from malicious remote servers. In contrast, applicant's invention bypasses network restrictions in a manner that implements a secure relay server and maintains a high level of security.

Since Zakurdaev and Gong do not teach or suggest each and every element of claims 1, 2, 8 and 17, they cannot render those claims or claims dependent thereon

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obvious. The rejections of claims 1-4 and 8-20 under 35 USC 103(a) should accordingly be withdrawn.

New Claims

New claims 21-24 are added to emphasize a network device that periodically transmits to the relay server a connection holding command to maintain and hold the TCP/IP connection, and a relay server that then transmits to the network device a response confirming the acceptance of the hold command over the same TCP/IP connection from which the hold command was sent.

According to the present invention, once network device 11 and 21 are registered to relay server 4 to form TCP/IP connections, network devices 11 and 21 periodically transmit to relay server 4 a connection holding demand (4, 4') that maintains and holds the TCP/IP connection. Thereafter, a response (5, 5') confirming the connection holding command is transmitted from the relay server 4 to network device 11 and 21 (FIG. 2, paragraph [0026]). In this manner, a plurality of TCP/IP connections can be held even when no connection demand 6 or data transmission 15 is forthcoming.

There is no disclosure, teaching or suggestion in Zakurdaev or Gong of this feature. Zakurdaev merely describes a system by which an ISP address is automatically retrieved and loaded into a user terminal. There is no need to maintain a connection once the ISP IP address has been communicated. Gong also fails to teach or suggest the hold command and the response to the hold command. Gong only serves to establish double links between the unsigned applet 24 and the remote server 16 (paragraph [0016]).

Thus, another advantage of applicant's invention relative to Gong and Zakurdaev is that a TCP/IP connection can be maintained, even after the original data request has been fulfilled, by utilizing a connection holding command and response, in order to receive future data transmission demands. By maintaining a TCP/IP connection, network devices do not need to login and logout to a relay server for every data request, thereby improving efficiency and saving time.

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Conclusion

This application is now in condition for allowance. The Examiner is urged to telephone the undersigned to resolve any issues that remain after entry of this amendment. Any fees due with this response may be charged to our Deposit Account No. 50-1314.

Respectfully submitted,

HOGAN & HARTSON L.L.P.

Date: October 12, 2006

By:_____
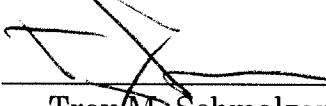
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